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Beliefs, anxiety and change readiness for artificial intelligence adoption among human resource managers: the moderating role of high-performance work systems

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ABSTRACT

This study examines the change readiness for artificial intelligence (AI) adoption among human resource (HR) managers. In particular, it investigates the effects of the three elements of attitudes (cognitive, affective and behavioural elements) related to the HR managers' beliefs about AI, their AI anxiety, and their change readiness for AI adoption. The research also seeks to explore the moderating role of high-performance work systems (HPWS) in the relationships between HR managers' beliefs, AI anxiety, and change readiness. Data were obtained from 417 HR managers working in China, with findings indicating that HR managers' beliefs about AI and their AI anxiety have a significant effect on their change readiness for AI adoption. Specifically, HR managers' beliefs positively influence their change readiness, while their AI anxiety negatively predicts their change readiness. Our results further highlight that HPWS can attenuate the negative effect of AI anxiety on HR managers' change readiness for AI adoption. The study's theoretical and practical implications, limitations and directions for future research are also discussed accordingly.

KEYWORDS

Beliefs about AI; AI anxiety; change readiness; high-performance work systems; attitudes; human resource managers; China

Introduction

Artificial intelligence (AI) plays an increasingly important role in changing the way organisations do business. The adoption of AI represents a paradigm shift in the way organisations operate their business and manage their employees, with AI promising work efficiency and effectiveness in a wide range of application areas. In the context of our

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study, we refer to AI as 'any intelligent agent (e.g. device) that distinguishes between different environments and can take a course of action(s) to increase the success of achieving predetermined objectives' (van Esch et al., 2019, p. 215). AI systems help organisations and individuals gather information, analyse data, and also enhance their decision-making in various areas, such as finance, transportation, healthcare and data security.

Despite the huge promise and global emergence of AI technologies, organisations may not be overly proactive in adopting AI as they still view AI as disrupting the work environment. In the context of HRM, AI is often used in the selection and recruitment of employees (van Esch et al., 2019), employee training, performance evaluation as well as matching individuals to tasks and enhancing employee experience (Bondarouk & Brewster, 2016). Albert (2019) found a variety of AI applications used in recruitment, such as chatbots, screening software and task automation tools. For instance, chatbots mimic human conversation tools and provide immediate responses to questions. Another example is the use of the screening software to review a large number of CVs and video interviews, while automation tools are used for scheduling events and activities. Overall, these applications using AI help take over routine work and improve the speed of recruitment (Albert, 2019).

Existing research has highlighted that, in any change process, employees' perceptions of change readiness are critical (Choi, 2011; Rafferty & Jimmieson, 2017). Madsen et al. (2005, p. 216) identified that an individual is ready for change 'when he or she understands, believes, and intends to change because of a perceived need'. Arguably, in the case of organisations undergoing changes such as AI adoption, understanding members' readiness for such change is critical (Armenakis et al., 1993; Rafferty et al., 2013). However, this has not been explored in the broader literature of human resource management (HRM) despite the implications of the changes caused by AI to the future of work (Jarrahi, 2018).

Although the body of research on organisational change readiness has provided insights and understanding, existing studies mainly relate to change readiness in the broader organisational change context (e.g. Bouckenooghe, 2010). For example, Eby et al.'s (2000) study is focused on organisational readiness for change, although the data were derived from employees' perceptions and reactions. As highlighted by Bouckenooghe (2010), it is important to ensure that studies either focus on a single level of analysis or highlight the dynamics of the relationships if these are examined at multiple levels. In this study, we focus on the individual-level conceptualisation and analysis of change readiness (Choi, 2011; Shah et al., 2017).

Bouckenooghe's (2010) review further highlighted that most studies are focused on the change recipients, with only a handful of studies focusing on the change agents. This presents another gap in the organisational change literature. In addressing this gap, we focus on HR managers as the change agents, given that HR, as an organisational function, is most likely to capitalise and adopt AI to optimise internal and external business processes (Guenole & Feinzig, 2018; van Esch et al., 2019). HR managers can be the champions of change (Caldwell, 2001), including in the adoption of new technology. Therefore, their change readiness to adopt AI not only potentially minimises any resistance to change but can also empower sceptical employees at all levels.

Few studies have also directly examined the three distinct elements of attitudes toward technology adoption. In order to address this gap in the literature, our study examines the role of cognitive, affective, and behavioural elements of HR managers' change readiness for AI adoption. Specifically, in this study, we consider change readiness for AI adoption as the HR managers' state of inclination to accept this change (Rafferty & Minbashian, 2019; Shah et al., 2017). Change readiness is a behavioural element of attitude as it is 'an individual's evaluation that they were prepared or ready for change' (Rafferty & Minbashian, 2019, p. 1630). We argue that individuals' change readiness can be influenced by their beliefs about AI (the cognitive element of attitude). In addition, Rafferty and Minbashian (2019, p. 1624) highlighted that most change researchers, while focusing on change beliefs, 'have ignored positive emotions about change'. We thus adopt a similar approach to Rafferty and Minbashian (2019) in including the affective element of change; however, we differ in our focus in this study by incorporating a less positive emotion, AI anxiety (Durndell & Haag, 2002; Kummer et al., 2017). We also consider the influence of individual AI anxiety (the affective element of attitude) on an individual's change readiness for AI adoption.

Beyond individual attitudes, we consider how organisational context can potentially enable successful change management (Choi, 2011). Existing studies on organisational change emphasise the role of high-performance work systems (HPWS) to support the change management process (Jeong & Shin, 2019), where HPWS enable collective learning (Jeong & Shin, 2019), build commitment (Chang & Chen, 2011), and facilitate employees to adopt change (Della Torre & Solari, 2013). It is particularly timely to examine HPWS as the condition that facilitates change readiness towards AI adoption, given that this is an area that has not been explored in scholarly research.

Specifically, we address two research questions: (1) To what extent do HR managers' beliefs about AI and their anxiety influence their change

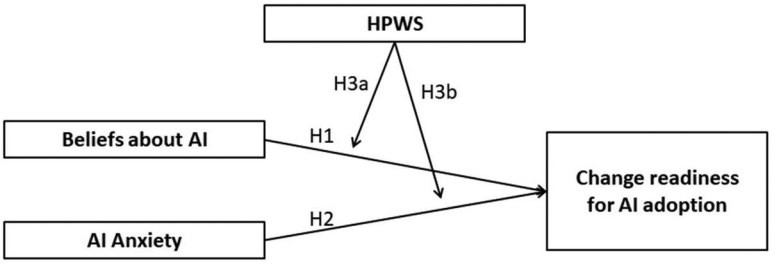

Figure 1. The conceptual model.

readiness for AI adoption?, and (2) To what extent do HPWS influence HR managers' beliefs, their AI anxiety, and their change readiness towards AI adoption? We adopt the tripartite model of attitude (TMA) and social cognitive theory (SCT) in this study to examine the individual and contextual environmental factors that influence change readiness. A conceptual model (Figure 1) was developed based on Rosenberg and Hovland's (1960) and Eagly and Chaiken's (1993) TMA, as our study focuses on examining the relationships between the three elements of attitudes.

The conceptual model was extended using SCT in emphasising the inter-relationships between personal factors (both cognitive and affective), environmental factors, and behavioural outcomes (Bandura, 1986, 2006). This theory highlights that humans are agentic—that is, there is triadic reciprocal determinism in how we make decisions and form judgements based on individual and environmental factors (Bandura, 1986, 2006). These factors may consequently affect the way we feel, and thus the way we act. Underpinned by social cognitive theory, we consider not only the individual's personal factors (beliefs about AI and AI anxiety) but also the HPWS as the environmental factor that influences individual change readiness for AI adoption (the behavioural outcome). Thus, the TMA is used to explain the inter-relationships between the elements of attitude (Ajzen, 2001, 2005), while the SCT is applied to explain the relationships between the personal factors (cognitive and affective), the environmental factor and the behavioural outcome in terms of AI adoption (Bandura, 1986, 2006).

Our study contributes to the literature in several ways. First, we contribute to the literature on organisational change by advancing the theoretical debate on attitudes towards organisational change in the context of AI adoption. Second, we contribute to the emerging literature on AI by exploring individual perceptions of AI adoption and providing insights into how individuals' beliefs and feelings influence their change readiness for AI adoption.

Third, we endeavour to contribute to the strategic HRM literature by considering the role of HPWS as an environmental factor that influences

AI adoption. Most of the research published on HPWS to date has examined macro-level outcomes (e.g. Fu et al., 2017; Zhou et al., 2019). In our study, we explore the individual-level HPWS as this constitutes a significant gap in knowledge on HPWS. Additionally, Boxall and Macky (2009) indicated that the majority of studies on HPWS had been conducted in the American and Western European contexts. As such, an examination of HPWS in another context can provide the contextual perspective of the implementation of HPWS.

Theoretical background and context

Tripartite model of attitudes (TMA)

An attitude is defined as a 'psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour' (Eagly & Chaiken, 1993, p. 1). While many studies have examined attitudes and behaviours, they appear to hold a one-dimensional view when examining attitudes. In this study, we draw upon the TMA, where attitude is portrayed as a tripartite model with three elements—cognitive, affective and behavioural elements (Ajzen, 2001, 2005; Eagly & Chaiken, 1993; Piderit, 2000; Rosenberg & Hovland, 1960). The rationale behind TMA is that even though the three elements of an attitude are manifestations of the same latent variable, they are independent and it is therefore useful to distinguish among them (Ajzen, 2001, 2005).

The cognitive element of an attitude refers to an individual's thoughts, beliefs, ideas or perceptual responses about an object or subject. This can range from an extremely positive response (e.g. useful) to one that is extremely negative (e.g. useless) (Eagly & Chaiken, 1993). The affective element refers to the feelings, moods and emotions that people experience with regard to an object or subject (Avey et al., 2008). These responses also range from extremely positive (e.g. hope and optimism) to extremely negative (e.g. fear and pessimism) (Albarracín et al., 2005; Eagly & Chaiken, 1993). Finally, the behavioural element (or conative element) of an attitude is reflected by an individual's evaluations of the attitude (Ajzen, 2001, 2005) based on his or her past experiences or future intentions (Piderit, 2000).

The TMA has been applied in management (e.g. Piderit, 2000) as well as in the psychology and marketing fields (e.g. Harnish & Roster, 2019), but it is not commonly considered in the scholarly literature on technology adoption. While the three elements of an attitude should be closely aligned, this assumption may not always hold. For example, one may have a positive cognitive and affective attitude towards new technologies such as AI, yet when confronted with having to learn the new technology (particularly without possessing basic knowledge and

understanding), the behavioural element to learning this technology can be negative. In this case, there may be inconsistencies in the cognitive, affective and behavioural elements of attitudes. The literature on attitudes indeed shows that the cognitive, affective and behavioural elements may not always align (Olson & Kendrick, 2008).

Piderit (2000) outlined that employees' resistance to organisational changes can be examined through viewing attitudes as multidimensional, comprising emotional, cognitive and intentional elements. Each of these dimensions is a separate continuum, allowing for the 'possibility of different reactions along the different dimensions' (Piderit, 2000, p. 787). Given that there is a potential duality effect of AI - such as labour adjustments, potential unemployment and inequality on the one hand, and increased productivity, automation and efficiency on the other hand, our study can provide a useful platform to examine the inter-relationships of the cognitive element (beliefs about AI), the affective element (AI anxiety), and the behavioural element (change readiness towards AI), representing the three elements of attitudes identified by the TMA. In line with the theory of TMA (Ajzen, 2001, 2005), we consider these three dimensions of attitudes to be distinct and separate.

Social cognitive theory (SCT)

A possible shortcoming of the TMA is that it neglects the effect of contextual or environmental factors on attitudes (e.g. Olson & Kendrick, 2008). Following recent developments in the literature (Ferguson & Fukukura, 2012), attitudes are increasingly perceived as being 'constructed on the spot' (e.g. Gawronski & Bodenhausen, 2006). Thus, attitudes are considered to be constructs that are not innate to individuals but are processed in a specific time and context. The shortcoming of TMA in excluding environmental factors is addressed in this study through the application of the SCT (Bandura, 1986, 2006). This theory views that an individual's behaviour is likely to be influenced by both individual and environmental factors. Individuals are conceived as dynamic planners who anticipate the outcomes of their actions, as self-regulators who correct their plans if necessary, and as social beings who operate in social systems. These actions co-create the social systems, which in turn affect their behaviours (Bandura, 2005).

This theory suggests that there are personal (internal) and external environmental factors that facilitate (or inhibit) an outcome expectation (Otaye-Ebede et al., 2020). These factors are numerous including, but not limited to, social support, training, self-efficacy, self-regulation, and locus of control. The theory has been applied in various contexts, such as in studies about sustainable consumption (e.g. Phipps et al., 2013)

or in research on workplace spirituality and ethical climate (Otaye-Ebede et al., 2020).

In the context of technology adoption, several studies using SCT have taken into account the aspect of anxiety in general, or technology anxiety in particular. For example, technology anxiety has been considered in the case of computer use (Conrad & Munro, 2008) and sensor-based technology (e.g. Kummer et al., 2017). Other studies using SCT have highlighted how the environment affects both the cognitive and affective aspects of technology adoption, such as in the use of knowledge management systems (e.g. Hoffman et al., 2015).

Drawing on these studies, we apply SCT to illustrate the role of environmental factors, embodied in HPWS, as a way to manage individual beliefs and feelings towards AI adoption. On the one hand, employees may believe that AI will increase their productivity and efficiency. On the other hand, they may also feel anxious as AI can introduce disruptive changes to their workplace and employment continuity. The theory highlights that there are aspects of the environment that can help individuals, and we argue in this case that organisations can change their environmental conditions through the implementation of HPWS in order to ease their employees' feelings when faced with change.

HPWS are commonly referred to as a group of separate yet coherently interconnected HR practices, including selection, extensive training, internal mobility, employment security, clear job descriptions, appraisal, rewards and participation (Han et al., 2018; Sun et al., 2007). Research on HPWS illustrates the need for organisations to invest in employees and to adopt and implement HR practices that leverage employees' skills and knowledge to create strategic value (Kehoe & Wright, 2013). The SCT is essentially used to understand the effects of personal factors and environmental determinants on an individual's behaviour change. In this study, we apply SCT in exploring the relationships between the personal factors (i.e. individual's beliefs about AI and individual's AI anxiety) and HPWS as the environmental factor in influencing the individual's change readiness towards AI (the behavioural factor).

AI adoption in China

AI changes the workplace in a variety of ways. AI-enabled machines can take over some of the tasks previously performed by human labour (Frey & Osborne, 2017). At the same time AI is expected to create up to 58 million new jobs in the next few years (Chowdhry, 2018), including new types of jobs for programmers, engineers, and other highly skilled specialists. Given the potentially disruptive effects of AI on employees and firm governance, many firms have been reluctant to

proceed with its adoption. Moreover, firms may lack the necessary information about the various threats and opportunities provided by AI, limiting their decision-making process to adopt AI. Interestingly, what AI is and what it does is still not well understood even among top managers. Based on a survey of 1,500 senior executives in the United States, only about 15% of the executives who responded to the survey noted that they were familiar with AI and its application in their companies (Deloitte, 2017).

This study focuses on AI adoption in Chinese firms. China presents an interesting context given the pace at which the country is pushing for the development and adoption of AI solutions. A report from the China Institute for Science and Technology (2018) noted that China leads the world in AI paper outputs and AI patents given that the country has the world's second-largest talent pool for AI. China also has the highest venture investment in AI and the highest concentration of AI companies in the world (primarily concentrated in Beijing). Additionally, tangible applications of AI are already part of everyday life among Chinese citizens, with some AI solutions contributing to COVID-19 measures (tracing applications), social credit scores, and even urban robotics and automation (Chen et al., 2020). Organisations such as Tencent and Baidu are also increasingly using AI and big data to manage their staff turnover (Greeven, 2017). With the country's GDP estimated to increase by more than 20% by 2030 through the application of AI (PwC, 2018), China is investing heavily to gain an advantage in AI (PwC, 2018; Sherman, 2019), and aspires to apply AI in surveillance/security, education, healthcare, and agriculture (Deng et al., 2019). Indeed, the country is poised to be in a position to exploit the applications of AI, making this context relevant for this study.

Hypothesis development

Beliefs about AI and change readiness for AI adoption

Given the relatively recent scholarly literature on the topic of AI in the management/HRM discipline, relevant literature examining individual beliefs about AI is rather limited. However, there are studies exploring individual cognitive attitudes towards the Internet (Durndell & Haag, 2002) and technology in general (Au & Enderwick, 2000). The literature on technology adoption highlights that users decide to adopt a new technology based on their attitudes (Au & Enderwick, 2000; Van der Heijden, 2004).

Drawing on the TMA (Ajzen, 2001, 2005), understanding human cognition and the behavioural aspect of attitude is important in the

context of new technology adoption (Au & Enderwick, 2000). This is because our beliefs can have an important influence on individual and organisational outcomes. Previous research has shown how technologies combined with human skills can enhance organisational performance (Dubey et al., 2019). Positive beliefs about technology may induce individuals to acquire the necessary skills to use technology effectively. Likewise, negative beliefs about technology may reduce individuals' willingness to develop complementary skills. They may indeed be apprehensive about how technology may disrupt their work or industry.

In applying the notion of the relationship between cognitive and behavioural elements as illustrated in the TMA, Ajzen (2005) highlighted that the correlation between cognition and connation (i.e. the behavioural element) of an attitude is particularly strong. Armenakis et al. (1993) noted that organisational members' cognitive beliefs and intentions could make them ready for organisational change. Rafferty and Minbashian (2019) also found support that one's cognitive belief about change is an important antecedent of change readiness. In this way, we argue that individuals who have positive beliefs about AI tend to be open to the new technology and are more receptive to the likely effects that AI may have in the workplace. They may view AI as complementary to human intelligence and thus, be more likely to 'join forces' for collaborative intelligence between AI and humans (Jarrahi, 2018; Wilson & Daugherty, 2018). They tend to view the positive effects of changes caused by AI, are less likely to resist change, and adapt quickly to new policies and procedures in relation to this change management. Those who do not believe that AI will enhance their productivity in the workplace are arguably more likely to resist the change, given that they are not ready for the disruption that AI would introduce to their daily work life. We thus posit that the elements of attitudes as reflected in the TMA (Ajzen, 2001, 2005), cognition (i.e. the beliefs about AI) and behaviour (i.e. change readiness towards AI adoption) are positively associated in that individuals who have positive beliefs about AI are more likely to be ready and receptive to adopting AI in the workplace AI in the workplace.

Hypothesis *1: An individual's beliefs about AI are positively related to the individual change readiness towards AI adoption.*

AI anxiety and change readiness for AI adoption

The topic of anxiety has been studied in several contexts of technology adoption, including in studies examining the phenomenon of 'computer anxiety' (Venkatesh, 2000), 'internet anxiety' (Thatcher et al., 2007), and recently among the digital-native generations (Bellini et al., 2016). Given

the emerging nature of AI, AI anxiety (Bellini et al., 2016; Johnson & Verdicchio, 2017) is a new topic, which necessitates further research on AI in the field of management in general, and HRM in particular.

Drawing on the TMA, the affective element of an attitude is distinguishable from the cognition and behavioural elements (Ajzen, 2001, 2005; Eagly & Chaiken, 1993). Studies examining change readiness need to consider not only the cognitive elements experienced by individuals but also their emotional influences (Rafferty et al., 2013; Rafferty & Minbashian, 2019). Existing studies are specifically limited in incorporating a less positive emotion that is particularly relevant in the context of technology adoption, i.e. AI anxiety. On a broader level, anxiety has been used as a measure of employee wellbeing (for a review, see Peccei & Van De Voorde, 2019), either in terms of assessing the consequences of anxiety on organisational performance (Jensen et al., 2013) or as a mediator to study job satisfaction (Wood et al., 2012). However, scholars have yet to fully engage with the topic of AI anxiety from the perspective of the individual. Besides studies focusing on the anxiety that AI creates for individuals seeking employment (van Esch et al., 2019), no empirical research to date has addressed the impact of individuals' AI anxiety on their change readiness for AI adoption.

Given that the affective and behavioural elements of an attitude are separate as illustrated in the TMA (Ajzen, 2001, 2005), the underlying nature of anxiety can potentially affect individuals' change readiness for AI adoption. The rise and popularisation of AI contribute to a general increase in the perceptions of uncertainty about the future of work, driven by the fear that smart machines have started to replace humans as information processors and decision-makers (Jarrahi, 2018; Johnson & Verdicchio, 2017). This feeling of anxiety can thus act as a major force in creating apprehension and distress, which may influence employees' readiness to adopt these new technologies. In addition, there have also been ongoing debates related to the trust that people should place in AI-driven technologies, such as autonomous vehicles and medical assistance devices (Hengstler et al., 2016). These patterns of thinking may result in individuals imagining the worst situation, feeling helpless and not knowing what to do about AI.

The underpinning theory of the TMA illustrates the link between the elements of attitudes in that we posit that there is a relationship between the affective element of attitude (AI anxiety) and the behaviour (change readiness towards AI adoption). It is important for employees to view organisational change positively (Rafferty et al., 2013; Rafferty & Minbashian, 2019). Employees should also have positive perceptions of the implications of such change for themselves and the wider organisation (Armenakis et al., 1993; Jones et al., 2005). Given that individuals'

feelings about change influence their change readiness (Rafferty & Minbashian, 2019), we argue that AI anxiety is expected to reduce individuals' change readiness to adopt AI in that the individuals who are more anxious about AI are less likely to be ready to adopt this new technology. Thus:

Hypothesis 2: Individuals' AI anxiety is negatively related to their change readiness for AI adoption.

The moderating role of HPWS

Scholarly work on HPWS highlights that the implementation of HPWS results in increased productivity, employee performance, and organisational performance. HPWS contribute to organisational performance (Han et al., 2018) by changing individuals' attitudes and behaviours through influencing their abilities, motivation and opportunities (Appelbaum et al., 2000). First, HPWS can develop and enhance individuals' abilities through practices such as staffing and extensive training (Jiang et al., 2012). Staffing provides organisations with the right people who have the right skills, knowledge and abilities to perform the job well. Similarly, other practices, such as training, participation, communication, internal career opportunities and incentive compensation, enable individuals to execute tasks much more effectively (Wei et al., 2010).

Second, HPWS can enhance employees' motivation through practices such as formal performance appraisal and performance-based rewards (Boxall & Macky, 2009). Such practices of HPWS motivate employees to perform their tasks to the best of their abilities, as they perceive that they will be evaluated positively and compensated fairly. Third, HPWS can provide more opportunities to employees (Kehoe & Wright, 2013), such as by providing autonomy for employees in decision-making and allowing them to have a say in the implementation of organisational change. All these imply that organisations need to provide a favourable work context to enable employees to perform their tasks well.

Underpinned by SCT, which emphasises the reciprocal relationships between personal, environmental and behavioural factors as previously outlined, we consider not only individual's beliefs and affective feeling as personal factors (cognitive and affective) but also the existence of HPWS as the environmental factor, in facilitating a behavioural outcome (i.e. one's change readiness for AI adoption). Organisations that implement HPWS may facilitate more positive beliefs about change—in our case, the adoption of AI. Effective implementation of HPWS enables individuals to develop their capabilities, promotes a willingness to participate in organisational decision-making, and enhances their positive beliefs. Empirical evidence highlights that practices such as training,

performance appraisal and participation, as embedded within HPWS, can improve performance (Messersmith et al., 2011).

Additionally, the implementation of HPWS may afford new opportunities for individuals to be trained in and work with AI as the new technology. They may experience new insights and be aware of new trends or new capabilities that AI can facilitate. In organisations that implement HPWS, employees are more likely to be motivated to develop themselves and be creative (Jeong & Shin, 2019). Therefore, HPWS with practices such as extensive training, clear job descriptions and results-oriented appraisal (Sun et al., 2007) may foster positive beliefs about AI and consequently facilitate change readiness for AI adoption.

In contrast, in organisations that do not implement HPWS, employees may not have positive beliefs about AI. For instance, if individuals have not been provided with opportunities for training in the application of AI, are not rewarded for their willingness to use AI, or are not given autonomy to determine the best way to do their job with the help of AI, they may feel that they are not ready for this significant change. In this way, their attitudes may not be as positive, and consequently, they may not be ready to adopt AI.

Adopting SCT in considering the environmental factor of HPWS, we argue that HPWS is interlinked with personal factors and behavioural outcomes. The way individuals perceive the existence and effectiveness of HPWS determines how they think (their beliefs about AI) and how they respond to the change (their change readiness for AI adoption). For example, Jones et al. (2005) found that employees' beliefs of their organisational support and values lead to higher levels of change readiness. Similarly, Gigliotti et al. (2019) suggested that employees' beliefs and perceptions of organisational support (in our case, the implementation of HPWS) enhance their change readiness. Based on the concepts of SCT of the inter-linkages between personal, environmental, and behavioural factors as earlier highlighted, we hypothesise that:

> *Hypothesis 3a: HPWS moderate the positive relationship between individuals' beliefs about AI and change readiness for AI adoption, such that the relationship is stronger for organisations that implement HPWS.*

We earlier hypothesised that individuals' AI anxiety will have a negative effect on their change readiness for AI adoption. Employees may feel terrified about what AI may do to their job. Instead of feeling hopeful and being ready to adopt AI to reduce their time in undertaking tasks or improve their decision-making process, individuals may experience anxiety, partly because of a lack of communication from the top leaders on how AI will transform their workplace and partly due to their perceptions that their skills may not be adequate to handle

the complexity of AI (Forbes Insights, 2019). Arguably, this effect could be lessened through the implementation of HPWS. Drawing on SCT, we argue that the implementation of HPWS in the organisation enables employees to perceive that their organisation provides opportunities for training, autonomy, rewards and participation. In this situation, employees are more likely to feel less anxious about the change as they are kept informed through participation, learning, and information sharing (Fu et al., 2017). On the other hand, if HPWS are not implemented, these employees may not receive the opportunity, training and information sharing that they expect from top managers in relation to how AI may affect their job. This consequently leads to their higher anxiety (Forbes Insights, 2019).

Based on the concepts of SCT of the inter-linkages between personal, environmental and behavioural factors, we argue that an organisation's HPWS as an environmental condition plays a role in potentially lessening the negative effect of AI anxiety through the use of practices such as training, employment security, clear job descriptions and results-oriented appraisal (Sun et al., 2007). When individuals feel they are involved in these various practices, they are less likely to feel anxious about how AI affects their employment future and organisational sustainability. In line with this theorising, HPWS and employees' anxiety are interlinked (Kehoe & Wright, 2013). As further highlighted by Jensen et al. (2013), employees who positively perceive HPWS utilisation are more likely to demonstrate lower levels of anxiety. We thus posit that employees who experience lower AI anxiety are more likely to display a positive behavioural outcome – in our case, they are ready to adopt AI, particularly when HPWS practices are implemented in the organisation. Thus:

Hypothesis 3b: HPWS moderate the negative relationship between individuals' AI anxiety and change readiness for AI adoption, such that the relationship is weaker for organisations that implement HPWS.

Method

Sample and procedure

We collected our data through an online panel, WJX, the largest online panels service in China. We specifically focused on HR managers as our sample for two reasons. First, HR as an organisational function is most likely to capitalise and adopt AI (Greeven, 2017; van Esch et al., 2019). For instance, Guenole and Feinzig (2018) noted that the HR function was one area disrupted by the new technology; the HR function in IBM was in fact one of the first business functions to adopt AI technology in terms of supporting the hiring process, ensuring

motivation and engagement, facilitating retention, providing personalised learning and career development, and also enabling 24/7 employee interaction. Second, given that there are not many studies examining the perceptions of change agents (Bouckenooghe, 2010), HR managers' perceptions and involvement in the adoption of AI can play a crucial role in piloting the implementation of AI and then institutionalising it throughout the organisation to achieve the intended outcomes.

We did not make any distinctions in terms of the companies where these respondents worked (whether foreign firms, state-owned enterprises, publicly-traded firms, or privately-owned firms), as we wanted to explore the general perceptions of HR managers across the country. Additionally, distinguishing the types of companies operating in China is challenging given that the legal registration information of companies operating in China may not reflect the actual ownership status. Hsieh and Song (2015) highlighted some issues with this situation—for instance, many firms that are registered as foreign firms can be state-owned because the regulation permits firms with more than one-third of foreign-held ownership to be registered as foreign firms in China. Due to the potential complexity, we did not include information related to the legal status of our respondents' firms.

A total of 512 responses were received, of which 417 (81.4%) were useable after the deletion of incomplete entries and removal of those that did not fit our sampling criteria. The participants received compensation directly from WJX. Of the 417 respondents, 65.3% were female and 34.7% were male, with an average age of 32.68 years ($SD = 5.60$, ranging from 19 to 56). In terms of the company size, 52.5% of the respondents were from companies with fewer than 500 employees, and 24.7% and 22.6% of the sample were from companies with 501 to 1,000 employees and more than 1,000 employees, respectively. In terms of the educational background, 74.1% of the respondents held a bachelor's degree, and 22.9% listed a master's or doctoral degree as their highest academic qualification.

Measures

The surveys were presented in Mandarin Chinese, which was then back-translated into English, following the procedure proposed by Brislin (1970). The variables were measured using a seven-point Likert scale (1 = strongly disagree/never; 7 = strongly agree/always).

Change readiness for AI adoption ($\alpha = 0.76$). Change readiness for AI adoption was assessed with the five-item scale developed by Rafferty and Minbashian (2019). We wanted to be specific when using the term 'change'; thus, we used the term 'AI adoption' to illustrate 'change' as

reflected in the original items to better fit with the context of our study. A sample item is: 'I am ready for the organisational change to adopt AI'.

Beliefs about AI (α = 0.83). We used the 10-item scale developed by Durndell and Haag (2002) to measure individuals' beliefs about AI. The scale was originally developed to measure students' internet cognitive attitudes. Once again, to fit the current study context, we changed the word 'internet' to 'AI.' A sample item is: 'People are becoming slaves to AI' (reverse item). A high score for this measure reflected more positive beliefs about AI.

AI anxiety (α = 0.88). AI anxiety was assessed with the 19-item scale developed by Durndell and Haag (2002), which originally measured students' computer anxiety. We also replaced the term 'computer' with 'AI' to fit the current study context. A sample item is: 'I do not think I would be able to learn AI programming language'. A high score for this measure suggested that individuals have a high level of AI anxiety.

HPWS (α = 0.91). We measured HPWS using the 27-item scale developed by Sun et al. (2007). Sample items include: 'Great effort is taken to select the right person' and 'Employees have few opportunities for upward mobility'.

Control variables. Following previous research on organisational change (Avey et al., 2008), we included age, gender, company size (1 = fewer than 50; 2 = between 50 and 500; 3 = between 501 and 1,000; 4 = between 1,001 and 5,000; 5 = between 5,001 and 10,000; and 6 = more than 10,000) and education as the control variables.

Analysis and results

Our measures demonstrated internal consistency (reliability) with Cronbach's α values above 0.70 (Hair et al., 2006; Nunnally, 1978). Given that the data we collected were cross-sectional from a single source, we first tested whether common-method bias was an issue in this study (Podsakoff et al., 2003). We used Harman's one-factor test (Harman, 1976) to examine whether a single factor could explain more than half of the variance from the unrotated factor solution. The result showed that the largest single component accounted for only 22.04% of the variance, indicating that no single factor dominates. Therefore, common-method bias was not an issue in our study.

We used linear regression to examine the hypothesised model and test the main effects of beliefs and AI anxiety on change readiness. We first conducted CFA to examine our measurement model by first testing a four-factor model included in the study: beliefs about AI, AI anxiety, HPWS and change readiness for AI adoption. We used the robust weighted least squares estimator The model fit was: χ^2 (1,704) =

3,996.266; RMSEA = .056; CFI = .855; TLI = .849. This four-factor model was a better fit compared to the single-factor model (χ^2 (1,710) = 5,623.366; RMSEA = .074; CFI = .749; TLI = .741). The RMSEA for both models was less than 0.08 indicating a good fit (Loehlin, 2004), but the four-factor model indicated a better fit. Moreover, the CFI for the four-factor model is .855, which is within the range of 0.80 to 0.89 (Byrne, 1998) This also indicated a better fit than the single-factor model.

To test the moderation effects, we used hierarchical multiple regression analysis to examine the interactions. All predictors in the model were grand-mean centred to avoid issues of multicollinearity (Aiken & West, 1991). In all our models, the variance inflation factors (VIFs) for all variables were below 5, indicating that multicollinearity was not a problem (Neter et al., 1990). Table 1 presents the means, standard deviations and correlations for the variables used in the study.

As Table 2 shows, in Models 1 and 2, we predicted individuals' change readiness for AI adoption using the control variables and individuals' beliefs about AI. The results showed that beliefs about AI had a positive effect on change readiness towards AI adoption ($b = 0.40$, $p < .001$, VIF = 1.04), supporting Hypothesis 1. In Models 3 and 4, we included the HPWS and the interaction term with individuals' beliefs about AI. Our results as shown in Model 4 indicated that individuals' beliefs about AI ($b = 0.23$, $p < .001$, VIF = 1.20) and the HPWS ($b = 0.57$, $p < .001$, VIF = 1.21) were significantly related to change readiness for AI adoption, but the effect of the interaction term was not significant (b = -0.1, $p > .05$, VIF = 1.06). Given that the interaction in Model 4 was not significant, and the R^2 did not increase from Model 3 to Model 4, Model 3 was a better model for the relationship between beliefs about AI and the change readiness for AI adoption. Thus, Hypothesis 3a was not supported. Based on Model 1 to Model 4, we derived the regression equation as below (ϵ denotes the residual in the equation):

$$\text{Change readiness} = 0.83 + 0.23\ \text{Beliefs} + 0.57\ \text{HPWS} - 0.10(\text{Beliefs} * \text{HPWS}) + \epsilon$$

Table 1. Descriptive statistics and correlations ($N = 417$).

Variables	Mean.	SD.	1	2	3	4	5	6	7	8
1 Age	32.74	5.59	—							
2 Gender	1.66	.48	-.02	—						
3 Organization size	2.70	1.01	.28***	-.06	—					
4 Education	5.22	.48	.08	-.11*	.13**	—				
5 Beliefs about AI	5.29	.89	.18***	-.01	-.03	.02	—			
6 AI Anxiety	2.73	.77	.15**	.03	-.02	-.01	-.80***	—		
7 HPWS	5.35	.71	.15**	-.11*	.16**	.08	.37***	-.45***	—	
8 Change readiness for AI adoption	5.44	.92	.11*	-.02	.08	.05	.39***	-.52***	.53***	—

*$p \leq .05$.
**$p \leq .01$.
***$p \leq .001$.

Table 2. Multiple regression of change readiness for AI adoption on the individuals' beliefs about AI and high-performance work systems ($N = 417$).

	Model 1		Model 2		Model 3		Model 4	
Independent variables	*B*	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*
Intercept	4.49***	.58	2.76***	.57	.85***	.55	.83	.55
Age	.02	.01	.00	.01	.00	.01	.00	.01
Gender	-.03	.10	-.02	.09	.06	.08	.06	.08
Organization size	.05	.05	.08	.04	.02	.04	.02	.04
Education	.07	.09	.06	.09	.02	.08	.03	.08
Beliefs about AI	—	—	.40***	.05	.23***	.05	.23***	.05
HPWS					.58***	.06	.57***	.06
Beliefs about AI × HPWS					—	—	-.10	.05
F test	1.780		15.781***		32.961***		28.934***	
Adjusted R^2	.01		.15		.32		.32	
ΔR^2	—		.14		.17		.00	

Dependent variable: Change readiness for AI adoption.
*$p \leq .05$.
**$p \leq .01$.
***$p \leq .001$.
ΔR^2 is the change of R^2 between two models. ΔR^2 of Model X is calculated by the R^2 of Model X minus the R^2 of Model (X-1).

Table 3. Multiple regression of change readiness for AI adoption on the individuals' AI anxiety and high-performance work systems ($N = 417$).

	Model 5		Model 6		Model 7		Model 8	
Independent variables	*B*	SE	B	SE	B	SE	B	SE
Intercept	4.49***	.58	6.49***	.52	3.67***	.59	3.64***	.59
Age	.02	.01	.00	.01	.00	.01	.00	.01
Gender	-.03	.10	.00	.08	.06	.08	.06	.08
Organization size	.05	.05	.06	.04	.02	.04	.02	.04
Education	.07	.09	.07	.08	.04	.08	.04	.07
AI Anxiety	—	—	-.61***	.05	-.42***	.05	-.41***	.05
HPWS					.48***	.06	.47***	.06
AI anxiety × HPWS					—	—	.11*	.06
F test	1.780		31.050***		41.753***		36.599***	
Adjusted R^2	.01		.27		.37		.38	
ΔR^2	—		.26		.10		.01	

Dependent variable: Change readiness for AI adoption.
*$p \leq .05$.
**$p \leq .01$.
***$p \leq .001$.
ΔR^2 is the change of R^2 between two models. ΔR^2 of Model X is calculated by the R^2 of Model X minus the R^2 of Model (X-1).

As Table 3 shows, in Models 5 and 6, we predicted individuals' change readiness for AI adoption using the control variables and individuals' AI anxiety. The results indicated that AI anxiety had a negative effect on change readiness for AI adoption (b = -0.61, $p < .001$, VIF = 1.03), supporting Hypothesis 2. In Models 7 and 8, we included the HPWS and the interaction term with individuals' beliefs about AI. As shown in Model 8, employees' AI anxiety (b = -0.41, $p < .001$, VIF = 1.28), HPWS ($b = 0.47$, $p < .001$, VIF = 1.31) and the interaction term ($b = 0.11$, $p < .05$, VIF = 1.05) were all significantly related to individuals' change readiness for AI adoption. Figure 2 shows the significant result of the interaction between AI anxiety and HPWS for AI adoption change

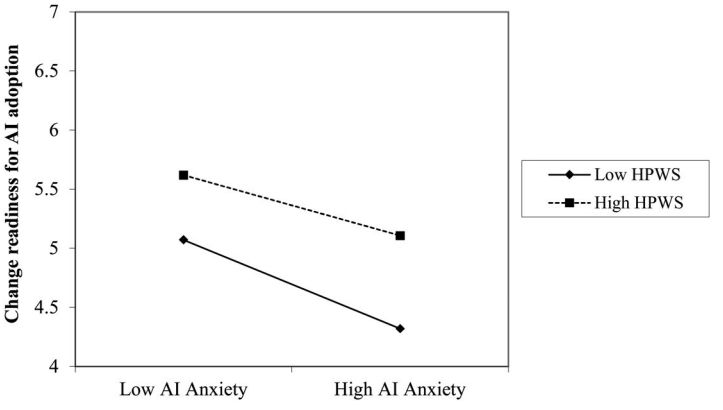

Figure 2. Moderation effect of HPWS on the relationship between AI anxiety and change readiness for AI Adoption

readiness. Given that the interaction in Model 8 was significant, and there was an increase in R^2 by 1 per cent from Model 7 to Model 8, Model 8 was deemed as a better model for the relationship between AI anxiety and the change readiness for AI adoption. Thus, Hypothesis 3 b was supported. Based on Model 5 to Model 8, we derived the regression equation as below (ϵ denotes the residual in the equation):

$$\text{Change readiness} = 3.64 - 0.41\,\text{Anxiety} + 0.47\,(\text{HPWS}) + 0.11\,(\text{AI Anxiety} * \text{HPWS}) + \epsilon$$

Discussion and conclusion

The study highlights that organisations must ensure that their employees are ready for change (Rafferty et al., 2013), particularly if the organisation is implementing a significant change as in the case of the adoption of AI. The results of the study indicated that HR managers' beliefs about AI and AI anxiety had a significant influence on their change readiness for AI adoption. Specifically, individuals with positive beliefs were more likely to accept the change to adopt AI, while individuals who experienced higher anxiety over AI were less ready to adopt AI. The findings contribute to empirical evidence of TMA in explaining that attitudes are a combination of cognitive/beliefs, feelings/affect, and behaviours (Ajzen, 2001, 2005; Eagly & Chaiken, 1993; Rosenberg & Hovland, 1960). Through the application of this theory, our findings provide insights that individual beliefs about AI (the cognitive element) are likely to influence the individual's change readiness for AI adoption (the behavioural element). Additionally, an employee's AI anxiety (the affective element) is also likely to influence his or her change readiness towards AI adoption (the behavioural element). Exploring the three elements of attitudes is important, as failure to address

the different elements of attitudes may result in inertia or even organisational crisis, with individuals being reluctant to implement the change or, if they do implement such change, they may only apply these new technologies in a limited manner (Rafferty & Jimmieson, 2017).

As for the moderating effect of HPWS, our results illustrated that HPWS, as perceived by individuals, moderate the negative relationship between individuals' AI anxiety and change readiness to adopt AI. While previous theoretical explanations of HPWS highlight that HPWS influence organisational-level outcomes (e.g. Fu et al., 2017), the results from our study indicated that the way individuals perceive HPWS also influences their change readiness to adopt AI. Our findings supported the premise of SCT (Bandura, 1986, 2006) in that there are inter-relationships between personal, environmental, and behavioural factors, with the findings confirming that HPWS as an environmental condition needs to be implemented to attenuate individuals' AI anxiety (a personal factor). This implies that, when HPWS are implemented, individuals are less likely to feel anxious and frustrated because they may perceive the usefulness of AI (Venkatesh, 2000) through, for example, being provided opportunities to participate in decision-making involving AI and being trained in AI (Wei et al., 2010). They may also be rewarded for their results, be given opportunities for career mobility, and be assured that their jobs will be secure if they can use AI to improve their decision-making processes (Sun et al., 2007). As such, consistent with SCT (Otaye-Ebede et al., 2020), this study confirmed the need to consider the environmental factor through the implementation of HPWS in understanding employees' behaviours for change.

This study offers several theoretical implications. First, the consideration to integrate both the cognitive (beliefs) and affective (AI anxiety) elements to explain individuals' change readiness for AI adoption in the organisation contributes to the much-needed understanding of the individual-level predictors of change readiness (Eby et al., 2000; Rafferty & Minbashian, 2019; Shah et al., 2017). This is an important contribution to the literature on HRM in providing empirical evidence that successful change management considers the 'people side' of management more effectively. The adoption of AI potentially involves a radical shift in business and workforce transformation; thus, handling the 'people side' such as managing their beliefs, anxiety and change readiness are critical. Examining HR managers' perspectives and addressing concerns such as anxiety will also help facilitate the successful implementation of change (Jensen et al., 2013). More generally, our integration of cognitive, affective, and behavioural attitudes enriches the literature on TMA by highlighting the effects of cognitive and affective attitudes on a behavioural outcome in the context of technology adoption.

Second, the current study tests the role of HPWS as an environmental factor in influencing employees' beliefs, feelings and readiness for change as in the case of the adoption of AI. To the best of our knowledge, no previous work on organisational change that is related to AI draws on this perspective. This contributes to the literature on HRM, given that our study is focused on the individual-level perceptions of HPWS which remain under-explored in the literature (Kehoe & Wright, 2013). Our results are in line with SCT in exploring the inter-linkages between personal and environmental factors in influencing individual behavioural outcomes (Otaye-Ebede et al., 2020). Nonetheless, we contribute to the literature on SCT by demonstrating that the role of the environmental factor differs in their influence on the relationship between affective factor and behavioural outcome on the one hand (a significant relationship in our case), and cognitive factor and behavioural outcome on the other (a non-significant relationship in our study).

Finally, our data were drawn from HR managers in China and thus attempt to address the calls from previous research to understand whether HPWS may have different effects due to the variations in practices in different countries (Boxall & Macky, 2009), such as training, selective staffing, employment security and incentive reward. However, while China appears to be progressive in the adoption of AI (PwC, 2018; Sherman, 2019), it is still unclear as to whether individual organisations operating in China and their employees are ready for this change, which this study has sought to highlight.

This study also offers several practical implications. First, organisations intending to adopt AI in the workplace need to ensure that individual employees (i.e. HR managers in our case) not only have the skills to work with AI but also have positive beliefs about AI and are not anxious about the changes that AI may bring. With AI being perceived as a significant change, adopting AI throughout the workplace requires leaders of the organisation and HR managers to convince individuals of the benefits of AI, build their trust in AI applications (Hengstler et al., 2016), and address their concerns regarding how AI may affect their tasks and/or employment. Thus, it is not only important to ensure that individuals have positive beliefs about AI, but it is also fundamental that leaders understand the anxiety that some individuals may experience. Those with higher AI anxiety may be fearful about whether AI will remove their autonomy (Jensen et al., 2013; Johnson & Verdicchio, 2017), and such feelings of anxiety need to be acknowledged and managed, rather than ignored or treated as insignificant. This consequently may have implications in terms of the organisational culture (Jones et al., 2005) and even the organisation's selection criteria when choosing candidates—perhaps organisations should consider selecting employees who are adaptable to change.

Second, given that individuals may not have the necessary skills in AI-associated tasks, such as machine learning and big data analytics (Dubey et al., 2019), managers must ensure that employees have positive perceptions that their organisations are supporting them (Gigliotti et al., 2019). In this way, HPWS need to be implemented effectively to provide opportunities for individuals to develop their knowledge, skills and ability to deal with AI. For example, clear job descriptions that involve AI need to be provided. Training could also be provided to individuals already employed by the organisation to increase their participation and reduce their level of AI anxiety. The rewards structure may also be altered to reward those who can utilise AI (Wilson & Daugherty, 2018) to improve the efficiency, productivity and decision-making process (McKinsey, 2017). Organisations thus need to make the conscious decision to embed and implement HPWS, as doing so can increase individuals' level of affective commitment (Chang & Chen, 2011; Conway & Monks, 2008) and reduce their level of AI anxiety.

Given the relatively recent literature on AI, there are limitations to the study, prompting suggestions for future research. First, in our study, we did not explain the detailed mechanisms of the processes by which individuals' beliefs and anxiety are linked to their change readiness. Past studies, however, have noted that there are some possible mechanisms in facilitating positive beliefs and minimising anxiety towards change, which could be examined in future studies. Second, given our cross-sectional data, we were unable to reach general conclusions about the causality of the relationships (Podsakoff et al., 2003). Thus, future studies adopting a longitudinal research design can be conducted to test the hypothesised relationships in this study.

Third, the study suffers from the limitation of our sample consisting of only HR managers. Even though this study is one of the first to examine individual-level predictors of change readiness for AI adoption, we suggest that future research can examine the perceptions of general employees in terms of their beliefs, AI anxiety and change readiness, as they may experience the effects of AI differently in comparison to the HR managers. Further, we did not specifically distinguish the types of firms for which our respondents worked, for reasons outlined previously. While we were unable to make comparisons between how AI and HPWS are implemented in different types of organisations, our exploratory discussions with several HR managers in China indicated that the topic is still relatively new in China. Thus, future research may investigate and compare employees' change readiness for AI adoption in different types of firms.

Fourth, when considering change readiness, our study did not examine individuals' personal valence, perceived capabilities or resistance to change (Piderit, 2000; Rafferty & Jimmieson, 2017). Future studies can,

therefore, incorporate the influence of specific individuals' attitudes towards AI, such as their resistance to change or their self-efficacy, to examine how ready they are to adopt AI. Our study was also limited to the study of attitudes and did not address actual behaviours. Future research can further explore the effect of other contextual factors in explaining individuals' behaviours in the adoption of AI as new technology. There is therefore a need for future research to examine change readiness for AI adoption by utilising different perspectives and theories. Finally, as this study was conducted in China, the generalisability of our findings requires further research in other contexts.

In conclusion, this study aimed to provide a more comprehensive approach to understanding individuals' readiness for radical change—in our case, their change readiness for AI adoption. In particular, the study provided insights into HR managers' change readiness for AI adoption by integrating their beliefs, their AI anxiety, and their perception of the implementation of HPWS in the organisation. Our findings shed light on the importance of acknowledging and addressing individuals' beliefs and anxiety. It also indicates that business leaders should devote attention to the implementation of HPWS, given that the effective implementation of HPWS, as perceived by their employees, plays a role in reducing individuals' AI anxiety and enhancing their change readiness for AI adoption. Despite the progress, a lot of work remains to be done to understand both the effects of AI on HR practices and how to ensure individuals in organisations are ready for this significant change.

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Data availability statement

The data that support the findings of this study are available from the corresponding author at [yuli.suseno@newcastle.edu.au], upon reasonable request.

References

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Sage.

Ajzen, I. (2001). Nature and operation of attitudes. *Annual Review of Psychology*, *52*(1), 27–58. https://doi.org/10.1146/annurev.psych.52.1.27

Ajzen, I. (2005). *Attitudes, personality, and behavior* (2nd ed.). Open University Press.

Albarracín, D., Zanna, M., Johnson, B., & Tarcan Kumkale, G. (2005). Attitudes: Introduction and scope. In D. Albarracín, B. Johnson, & M. Zanna (Eds.), *Handbook of attitudes* (pp. 1–20). Psychology Press.

Albert, E. T. (2019). AI in talent acquisition: A review of AI-applications used in recruitment and selection. *Strategic HR Review*, *18*(5), 215–221. https://doi.org/10.1108/SHR-04-2019-0024

Appelbaum, E., Bailey, T., Berg, P., & Kalleberg, A. L. (2000). *Manufacturing advantage: Why high-performance work systems pay off*. Cornell University Press.

Armenakis, A., Harris, S. G., & Mossholder, K. W. (1993). Creating readiness for organizational change. *Human Relations*, *46*(6), 681–703. https://doi.org/10.1177/001872679304600601

Au, A. K. M., & Enderwick, P. (2000). A cognitive model on attitude towards technology adoption. *Journal of Managerial Psychology*, *15*(4), 266–282.

Avey, J. B., Wernsing, T. S., & Luthans, F. (2008). Can positive employees help positive organizational change? Impact of psychological capital and emotions on relevant attitudes and behaviors. The Journal of Applied Behavioral Science, *44*(1), 48–70. https://doi.org/10.1177/0021886307311470

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice Hall.

Bandura, A. (2005). The evolution of social cognitive theory. In K. G. Smith, & M. A. Hitt (Eds.), *Great minds in management* (pp. 9–35).Oxford University Press.

Bandura, A. (2006). Toward a psychology of human agency. *Perspectives on Psychological Science : A Journal of the Association for Psychological Science*, *1*(2), 164–180. https://doi.org/10.1111/j.1745-6916.2006.00011.x

Bellini, C. G. P., Filho, M. M. I., de Moura Junior, P. J., & de Faria Pereira, R. D. C. (2016). Self-efficacy and anxiety of digital natives in face of compulsory computer-mediated tasks: A study about digital capabilities and limitations. *Computers in Human Behavior*, *59*(1), 49–57. https://doi.org/10.1016/j.chb.2016.01.015

Bondarouk, T., & Brewster, C. (2016). Conceptualising the future of HRM and technology research. *The International Journal of Human Resource Management*, *27*(21), 2652–2671. https://doi.org/10.1080/09585192.2016.1232296

Bouckenooghe, D. (2010). Positioning change recipients' attitudes toward change in the organizational change literature. The Journal of Applied Behavioral Science, *46*(4), 500–531. https://doi.org/10.1177/0021886310367944

Boxall, P., & Macky, K. (2009). Research and theory on high-performance work systems: Progressing the high-involvement stream. *Human Resource Management Journal*, *19*(1), 3–23. https://doi.org/10.1111/j.1748-8583.2008.00082.x

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology*, *1*(3), 185–216. https://doi.org/10.1177/135910457000100301

Byrne, B. M. (1998). *Structural equation modeling with LISREL, PRELIS, and SIMPLIS: Basic concepts, applications, and programming*. Sage.

Caldwell, R. (2001). Champions, adapters, consultants and synergists: The new change agents in HRM. *Human Resource Management Journal*, *11*(3), 39–52. https://doi.org/10.1111/j.1748-8583.2001.tb00044.x

Chang, P.-C., & Chen, S. J. (2011). Crossing the level of employee's performance: HPWS, affective commitment, human capital, and employee job performance in professional service organizations. The International Journal of Human Resource Management, *22*(4), 883–901. https://doi.org/10.1080/09585192.2011.555130

Chen, B., Marvin, S., & While, A. (2020). Containing COVID-19 in China: AI and the robotic restructuring of future cities. *Dialogues in Human Geography*, *10*(2), 238–241. https://journals.sagepub.com/doi/full/10.1177/2043820620934267https://doi.org/10.1177/2043820620934267

China Institute for Science and Technology. (2018). *China: AI development report*. http://www.sppm.tsinghua.edu.cn/eWebEditor/UploadFile/China_AI_development_report_2018.pdf

Choi, M. (2011). Employees' attitudes toward organizational change: A literature review. *Human Resource Management*, *50*(4), 479–500. https://doi.org/10.1002/hrm.20434

Chowdhry, A. (2018, September 18). Artificial Intelligence to create 58 million new jobs by 2022, says report. *Forbes*. https://www.forbes.com/sites/amitchowdhry/2018/09/18/artificial-intelligence-to-create-58-million-new-jobs-by-2022-says-report/#32c3a9e44d4b

Conrad, A. M., & Munro, D. (2008). Relationships between computer self-efficacy, technology, attitudes and anxiety: Development of the computer technology use scale (CTUS). *Journal of Educational Computing Research*, *39*(1), 51–73. https://doi.org/10.2190/EC.39.1.d

Conway, E., & Monks, K. (2007). HR practices and commitment to change: An employee level analysis. *Human Resource Management Journal*, *18*(1), 72–89. https://doi.org/10.1111/j.1748-8583.2007.00059.x

Della Torre, E., & Solari, L. (2013). High-performance work systems and the change management process in medium-sized firms. The International Journal of Human Resource Management, *24*(13), 2583–2607. https://doi.org/10.1080/09585192.2012.744337

Deloitte. (2017). *The 2017 Deloitte State of Cognitive Survey*. https://www2.deloitte.com/content/dam/Deloitte/us/Documents/deloitte-analytics/us-da-2017-deloitte-state-of-cognitive-survey.pdf

Deng, I., Zhang, J., & Soo, Z. (2019, December 18). China dreams of becoming an AI utopia, pushing beyond surveillance and into education and health care. *South China Morning Post*. https://www.scmp.com/tech/big-tech/article/3042451/china-dreams-becoming-ai-utopia-pushing-beyond-surveillance-and

Dubey, R., Gunasekaran, A., Childe, S. J., Blome, C., & Papadopoulos, T. (2019). Big data and predictive analytics and manufacturing performance: Integrating institutional theory, resource-based view and big data culture. *British Journal of Management*, *30*(2), 341–361. https://doi.org/10.1111/1467-8551.12355

Durndell, A., & Haag, Z. (2002). Computer self-efficacy, computer anxiety, attitudes towards the Internet and reported experience with the Internet, by gender, in an East European sample. *Computers in Human Behavior*, *18*(5), 521–535. https://doi.org/10.1016/S0747-5632(02)00006-7

Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Harcourt, Brace, Jovanovich.

Eby, L. T., Adams, D. M., Russell, J. E., & Gaby, S. H. (2000). Perceptions of organizational readiness for change: Factors related to employees' reactions to the implementation of team-based selling. *Human Relations*, *53*(3), 419–442. https://doi.org/10.1177/0018726700533006

Ferguson, M. J., & Fukukura, J. (2012). Likes and dislikes: A social cognitive perspective on attitudes. In Susan T. Fiske and C. Neil Macrae (Ed.), *The SAGE handbook of social cognition*, (pp. 165–186). SAGE Publications Ltd.

Forbes Insights. (2019, March 27). AI anxiety: An ethical challenge for business. *Forbes*. https://www.forbes.com/sites/insights-intelai/2019/03/27/ai-anxiety-an-ethical-challenge-for-business/#a9b642578807

Frey, C. B., & Osborne, M. A. (2017). The future of employment: How susceptible are jobs to computerisation?*Technological Forecasting and Social Change*, *114*, 254–280. https://doi.org/10.1016/j.techfore.2016.08.019

Fu, N., Flood, P. C., Bosak, J., Rousseau, D. M., Morris, T., & O'Regan, P. (2017). High-performance work systems in professional service firms: Examining the practices-resources-uses-performance linkage. *Human Resource Management*, *56*(2), 329–352. https://doi.org/10.1002/hrm.21767

Gawronski, B., & Bodenhausen, G. V. (2006). Associative and propositional processes in evaluation: An integrative review of implicit and explicit attitude change. *Psychological Bulletin*, *132*(5), 692–731. https://doi.org/10.1037/0033-2909.132.5.692

Gigliotti, R., Vardaman, J., Marshall, D. R., & Gonzalez, K. (2019). The role of perceived organizational support in individual change readiness. *Journal of Change Management*, *19*(2), 86–100. https://doi.org/10.1080/14697017.2018.1459784

Greeven, M. (2017, November 3). Chinese Internet leaders are also HR pioneers. *Nikkei Asian Review*. https://asia.nikkei.com/Business/Chinese-internet-leaders-are-also-HR-pioneers2

Guenole, N., & Feinzig, S. (2018). *The business case for AI in HR*. IBM Corporation.

Hair, J., J. F., Black, W. C., Babin, B. J., Anderson, R. E., L., & Tatham, R. (2006). *Multivariant data analysis*. Pearson International Edition.

Han, J. H., Liao, H., Taylor, M. S., & Kim, S. (2018). Effects of high-performance work systems on transformational leadership and team performance: Investigating the moderating roles of organizational orientations. *Human Resource Management*, *57*(5), 1065–1082. https://doi.org/10.1002/hrm.21886

Harman, H. H. (1976). *Modern factor analysis* (3rd ed.).The University of Chicago Press.

Harnish, R. J., & Roster, C. A. (2019). The tripartite model of aberrant purchasing: A theory to explain the maladaptive pursuit of consumption. *Psychology & Marketing*, *36*(5), 417–430. https://doi.org/10.1002/mar.21159

Hengstler, M., Enkel, E., & Duelli, S. (2016). Applied artificial intelligence and trust: The case of autonomous vehicles and medical assistance devices. *Technological Forecasting and Social Change*, *105*, 105–120. https://doi.org/10.1016/j.techfore.2015.12.014

Hoffman, C. P., Lutz, C., & Meckel, M. (2015). Content creation on the Internet: A social cognitive perspective on the participation divide. *Information, Communication & Society*, *18*(6), 696–716. https://doi.org/10.1080/1369118X.2014.991343

Hsieh, C.-T., & Song, Z. (2015). *Grasp the large, let go of the small: The transformation of the state sector in China*. National Bureau of Economic Research, NBER Working Paper Series. https://www.nber.org/papers/w21006.pdf

Jarrahi, M. H. (2018). Artificial Intelligence and the future of work: Human-AI symbiosis in organizational decision making. *Business Horizons*, *61*(4), 577–586. https://doi.org/10.1016/j.bushor.2018.03.007

Jensen, J. M., Patel, P. C., & Messersmith, J. G. (2013). High-performance work systems and job control: Consequences for anxiety, role overload, and turnover intentions. *Journal of Management*, *39*(6), 1699–1724. https://doi.org/10.1177/0149206311419663

Jeong, I., & Shin, S. J. (2019). High-performance work practices and organizational creativity during organizational change: A collective learning perspective. *Journal of Management*, *45*(3), 909–925. https://doi.org/10.1177/0149206316685156

Jiang, K., Lepak, D. P., Hu, J., & Baer, J. C. (2012). How does human resource management influence organizational outcomes? A meta-analytic investigation of mediating mechanisms. *Academy of Management Journal*, *55*(6), 1264–1294. https://doi.org/10.5465/amj.2011.0088

Johnson, D. G., & Verdicchio, M. (2017). AI anxiety. *Journal of the Association for Information Science and Technology*, *68*(9), 2267–2270. https://doi.org/10.1002/asi.23867

Jones, R., Jimmieson, N., & Griffiths, A. (2005). The impact of organizational culture and reshaping capabilities on change implementation success: The mediating role of readiness for change. *Journal of Management Studies*, *42*(2), 361–386. https://doi.org/10.1111/j.1467-6486.2005.00500.x

Kehoe, R. R., & Wright, P. M. (2013). The impact of high-performance human resource practices on employees' attitudes and behaviors. *Journal of Management*, *39*(2), 366–391. https://doi.org/10.1177/0149206310365901

Kummer, T.-F., Recker, J., & Bick, M. (2017). Technology-induced anxiety: Manifestations, cultural influences, and its effect on the adoption of sensor-based technology in German and Australian hospitals. *Information & Management*, *54*(1), 73–89. https://doi.org/10.1016/j.im.2016.04.002

Loehlin, J. C. (2004). *Latent variables models: An introduction to factor, path, and structural analysis* (4th ed.). Erlbaum.

Madsen, S. R., Miller, D., & John, C. R. (2005). Readiness for organizational change: Do organizational commitment and social relationships in the workplace make a difference?*Human Resource Development Quarterly*, *16*(2), 213–233. https://doi.org/10.1002/hrdq.1134

McKinsey. (2017). A future that works: Automation, employment, and productivity. McKinsey Global Institute. https://www.mckinsey.com/~/media/mckinsey/featured%20insights/digital%20disruption/harnessing%20automation%20for%20a%20future%20that%20works/a-future-that-works-executive-summary-mgi-january-2017.ashx

Messersmith, J. G., Patel, P. C., Lepak, D. P., & Gould-Williams, J. S. (2011). Unlocking the black box: Exploring the link between high-performance work systems and performance. *The Journal of Applied Psychology*, *96*(6), 1105–1118. https://doi.org/10.1037/a0024710

Neter, J., Wasserman, W., & Kutner, M. H. (1990). *Applied linear statistical models*. Irwin.

Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). McGraw-Hill.

Olson, M. A., & Kendrick, R. V. (2008). Origins of attitudes. In W. Crano, & R. Prislin (Eds.), *Attitudes and attitude change* (pp. 111–131). Psychology Press.

Otaye-Ebede, L., Shaffakat, S., & Scott, F. (2020). A multi-level model examining the relationships between workplace spirituality, ethical climate, and outcomes: A social cognitive theory perspective. *Journal of Business Ethics*, *166*(3), 611–626. https://doi.org/10.1007/s10551-019-04133-8

Peccei, R., & Van De Voorde, K. (2019). Human Resource Management–well-being–performance research revisited: Past, present, and future. *Human Resource Management Journal*, *29*(4), 539–563. https://doi.org/10.1111/1748-8583.12254

Phipps, M., Ozanne, L. K., Luchs, M. G., Subrahmanyan, S., Kapitan, S., Catlin, J. R., Gau, R., Naylor, R. W., Rose, R. L., Simpson, B., & Weaver, T. (2013). Understanding the inherent complexity of sustainable consumption: A social cognitive framework.

Journal of Business Research, *66*(8), 1227–1234. https://doi.org/10.1016/j.jbusres.2012.08.016

Piderit, S. K. (2000). Rethinking resistance and recognizing ambivalence: A multidimensional view of attitudes toward an organizational change. *Academy of Management Review*, *25*(4), 783–794. https://doi.org/10.5465/amr.2000.3707722

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *The Journal of Applied Psychology*, *88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

PwC. (2018). What will be the net impact of AI and related technologies on jobs in China?https://www.pwc.com/gx/en/issues/artificial-intelligence/impact-of-ai-on-jobs-in-china.pdf

Rafferty, A. E., & Jimmieson, N. L. (2017). Subjective perceptions of organizational change and employee resistance to change: Direct and mediated relationships with employee well-being. *British Journal of Management*, *28*(2), 248–264. https://doi.org/10.1111/1467-8551.12200

Rafferty, A. E., & Minbashian, A. (2019). Cognitive beliefs and positive emotions about change: Relationships with employee change readiness and change-supportive behaviors. *Human Relations*, *72*(10), 1623–1650. https://doi.org/10.1177/0018726718809154

Rafferty, A. E., Jimmieson, N. L., & Armenakis, A. (2013). Change readiness: A multilevel review. *Journal of Management*, *39*(1), 110–135. https://doi.org/10.1177/0149206312457417

Rosenberg, M. J., & Hovland, C. I. (1960). Cognitive, affective, and behavioral components of attitude. In M. Rosenberg, C. Hovland, W. McGuire, R. Abelson, & J. Brehm (Eds.), *Attitude organization and change: An analysis of consistency among attitude components* (1–14). Yale University Press.

Shah, N., Irani, Z., & Sharif, A. M. (2017). Big data in an HR context: Exploring organizational change readiness, employee attitudes and behaviors. *Journal of Business Research*, *70*, 366–378. https://doi.org/10.1016/j.jbusres.2016.08.010

Sherman, N. (2019, November 12). Is China gaining an edge in Artificial Intelligence? BBC. https://www.bbc.com/news/business-50255191

Sun, L.-Y., Aryee, S., & Law, K. S. (2007). High-performance human resource practices, citizenship behavior, and organizational performance: A relational perspective. *Academy of Management Journal*, *50*(3), 558–577. https://doi.org/10.5465/amj.2007.25525821

Thatcher, J. B., Loughry, M. L., Lim, J., & McKnight, D. H. (2007). Internet anxiety: An empirical study of the effects of personality, beliefs, and social support. *Information & Management*, *44*(4), 353–363. https://doi.org/10.1016/j.im.2006.11.007

Van der Heijden, H. (2004). User acceptance of hedonic information systems. *MIS Quarterly*, *28*(4), 695–704. https://doi.org/10.2307/25148660

van Esch, P., Black, J. S., & Ferolie, J. (2019). Marketing AI recruitment: The next phase in job application and selection. *Computers in Human Behavior*, *90*, 215–222. https://doi.org/10.1016/j.chb.2018.09.009

Venkatesh, V. (2000). Determinants and perceived ease of use: Integrating control, intrinsic motivation, and emotion into the Technology Acceptance Model. *Information Systems Research*, *11*(4), 342–365. https://doi.org/10.1287/isre.11.4.342.11872

Wei, Y.-C., Han, T.-S., & Hsu, I.-C. (2010). High-performance HR practices and OCB: A cross-level investigation of a causal path. The International Journal of Human Resource Management, *21*(10), 1631–1648. https://doi.org/10.1080/09585192.2010.500487

Wilson, H. J., & Daugherty, P. R. (2018). Collaborative intelligence: Humans and AI are joining forces. *Harvard Business Review*, *96*(4), 114–123.

Wood, S., Van Veldhoven, M., Croon, M., & de Menezes, L. M. (2012). Enriched job design, high involvement management and organizational performance: The mediating roles of job satisfaction and well-being. *Human Relations*, *65*(4), 419–445. https://doi.org/10.1177/0018726711432476

Zhou, Y., Fan, X., & Son, J. (2019). How and when matter: Exploring the interaction effects of high-performance work systems, employee participation, and human capital on organizational innovation. *Human Resource Management*, *58*(3), 253–268. https://doi.org/10.1002/hrm.21950